Second Avenue Subway

New York, New York
(November 2002)

Description

The New York Metropolitan Transportation Authority (MTA) is proposing a new Second Avenue Subway (SAS). The SAS is anticipated to alleviate severe overcrowding conditions that currently occur on the east side of Manhattan's only full north-south rapid transit line (Lexington Avenue - #4, #5 and #6 lines). The SAS project would be a new, two-track, 8.5-mile heavy rail line extending the length of Manhattan's east side from 125th Street in East Harlem to Hanover Square in the Financial District. The SAS would provide two new subway services. The first would be a full-length SAS route operating between 125th Street and Hanover Square. The second service would operate along Second Avenue from 125th Street to 63rd Street, where it would divert west along the 63rd Street Line and stop at the existing Lexington Avenue 63rd Street Station. It would then join the existing Broadway Line via an existing connection and provide express service along Seventh Avenue and Broadway before crossing the Manhattan Bridge to Brooklyn. Passengers traveling to Lower Manhattan on this route could also transfer to local service to reach destinations south of Canal Street along Broadway.

As economic growth has occurred, MTA reports that more stress has been placed on the Lexington Avenue line and on buses operating in local traffic on congested north-south streets. As a result, MTA estimates that Lexington Avenue express trains currently operate approximately 16 percent above the agency's loading guidelines – particularly at the line's busiest station (42nd Street-Grand Central Terminal). MTA anticipates that the added capacity of the SAS would improve service for passengers traveling into and through the east side corridor on the new service, the existing Lexington Avenue line and other parts of the New York City area. MTA estimates that approximately 29,000 passengers would shift to the SAS from the Lexington Avenue express line, thereby reducing excess demand from the existing line and allowing the service to operate reliably throughout Manhattan.

Summary Description	
Proposed Project:	Heavy Rail Line 8.5 Miles, 16 Stations
Total Capital Cost ($YOE):	$16.8 Billion
Section 5309 New Starts Share ($YOE):	$8.4 Billion (50%)
Annual Operating Cost (2020 $YOE):	$44 Million
Ridership Forecast (2020):	591,000 Average Weekday Boardings 14,900 Daily New Riders
Opening Year Ridership Forecast (2021):	591,000 Average Weekday Boardings
FY 2004 Finance Rating:	**Medium**
FY 2004 Project Justification Rating:	**Medium**
FY 2004 Overall Project Rating:	**Recommended**

The *Recommended* rating is primarily attributable to the exceptionally strong transit-supportive land use along the corridor and throughout the metropolitan area, anticipated mobility benefits within the corridor, and a sufficient financial plan for the project at this stage of development. The overall project rating applies to this *Annual Report on New Starts* **and reflects conditions as of November 2002.** Project evaluation is an ongoing process. As New Starts projects proceed through development, the estimates of costs, benefits, schedules and impacts are refined. **The FTA's ratings and recommendations will be updated annually to reflect new information, changing conditions and refined financing plans.**

Status

MTA completed a Major Investment Study/Draft Environmental Impact Statement (MIS/DEIS) on the Manhattan East Side Corridor in September 1999. MTA/New York City Transit is currently preparing a Supplemental DEIS for the full-length SAS project. The Supplemental DEIS is scheduled for completion in early 2003. A Final EIS is scheduled for completion in Fall 2003. In May 2001, the New York Metropolitan Transportation Council – the region's Metropolitan Planning Organization – endorsed the advancement of Preliminary Engineering (PE) for the full-length SAS. FTA approved MTA's request to initiate PE on the SAS in December 2001. Initially, MTA examined two alignment options for the full-length SAS south of Houston Street for service to Lower Manhattan – one would add new subway service via Water Street and the other would connect to the existing Nassau Street Line. Following consultation with local community and interest groups, MTA selected the Water Street alignment as the preferred option in Lower Manhattan for the SAS project. In addition, two changes have been made to the southern portion of the alignment. The southern terminus would now be Hanover Square, instead of Whitehall Street, in the Financial District. Moreover, an intermediate station at Seaport (Water Street at Fulton Street) would replace a planned Wall Street Station along the preferred alignment.

TEA-21 Section 3030(a)(39) authorizes the Manhattan East Side Alternatives/Second Avenue Subway for Final Design and construction. Through FY 2002, Congress has appropriated $4.98 million in Section 5309 New Starts funds for the project.

Evaluation

The following criteria have been estimated in conformance with FTA's *Reporting Instructions for the Section 5309 New Starts Criteria*, updated in June 2002. The project will be reevaluated for next year's *Annual Report on New Starts* and when it is ready to advance into Final Design.

Project Justification Quantitative Criteria		
Mobility Improvements Rating: Medium-High		
	New Start vs. Baseline	
Average Employment Per Station	75,564	
Average Low Income Households Per Station	2,665	
Transportation System User Benefit Per Project Passenger Mile (Minutes)	1.9	
Environmental Benefits Rating: High		
Criteria Pollutant Reduced (tons)	**New Start vs. Baseline**	
Carbon Monoxide (CO)	300	
Nitrogen Oxide (NO_x)	5	
Hydrocarbons	10	
Particulate Matter (PM_{10})	42	
Carbon Dioxide (CO_2)	800	
Annual Energy Savings (million) BTU	15,140	
Cost Effectiveness Rating: Low		
	New Start vs. Baseline	
Cost per Transportation System User Benefit (current year dollars/hour)	$39.70	
Operating Efficiencies Rating: Medium		
	Baseline	**New Start**
System Operating Cost per Passenger Mile (current year dollars)	$0.27	$0.27

Project Justification
Rating: Medium

The *Medium* project justification rating reflects the corridor's exceptionally strong transit-supportive land use environment, anticipated mobility improvements and robust employment markets. With the continued improvement in FTA's project evaluation process, including the introduction of the transportation system user benefit measure, the value of proposed transit projects can be more accurately assessed. Accordingly, FTA intends to put additional emphasis on the cost-effectiveness measure. This year, this project has received a "low" rating for cost-effectiveness, which raises concerns about the merits of the project for Federal funding. FTA strongly encourages the sponsor to improve the cost-effectiveness of the project.

Based on 1990 Census data, MTA estimates that there are approximately 42,639 low-income households within a ½-mile radius of the proposed 16 station areas. This represents approximately 13 percent of the total number of households located within a ½-mile radius of proposed station areas. In addition, MTA estimates that the Second Avenue Subway (SAS) would serve approximately 1.2 million jobs that are located within a ½-mile radius of proposed station areas. New York City is designated as a "severe non-attainment area" for ozone and a "moderate non-attainment area" for carbon monoxide. The primary purpose of the SAS project is to provide faster travel for current transit riders and relieve severe overcrowding conditions that already occur on the existing Lexington Avenue line as reflected in the transportation system user benefit measure. MTA estimates that the SAS project has an incremental cost per incremental trip value of $210.00. This incremental cost per incremental rider figure is exceptionally high because of the difficulty of attracting new transit riders in a market in which the majority of commuters already use transit.

Existing Land Use, Transit-Supportive Land Use Policies and Future Patterns Rating: High

The *High* rating reflects existing land use conditions that are highly transit-supportive, with high-density, pedestrian-oriented development prevailing throughout the corridor. Strong policies and measures such as zoning and parking restrictions, which have been very effective in producing existing land use patterns, will continue to reinforce the compact, urban development of the Second Avenue Corridor.

Existing Conditions: The Second Avenue Subway would serve an area of intense urban development covering most of the east side of Manhattan, from East Harlem south to Lower Manhattan. Within proposed station areas, residential neighborhoods contain approximately 637,000 residents, while area businesses employ nearly 1.3 million workers. Accordingly, land use densities throughout the Second Avenue Corridor include 68,500 residents per square mile and 129,400 jobs per square mile. The area's land use character, which incorporates mixed uses and compact development patterns, is highly transit supportive of pedestrian activity and transit usage. While residential land use predominates in some areas and office development in others, mixed uses prevail throughout the corridor in varying concentrations. In addition, transit ridership throughout Manhattan, including the Second Avenue Corridor, is the highest in the nation. Moreover, several sections of the corridor, such as East Midtown Manhattan, which includes New York City's central business district (defined as the area south of 60th Street on the west side and south of 79th Street on the east side), are nearly fully developed.

Future Plans, Policies and Performance: Market trends and public policies support the continuing growth and concentration of activity in the corridor. Corridor population is forecast to increase approximately 6.4 percent (677,700) between the years 2000-2020. Corridor employment is forecast to grow approximately 6.7 percent (1,284,100) during the same time period. While the corridor is already developed with high-density land uses, policies and tools are in place that will support continued transit-supportive land use development in areas that can accommodate growth. Chief among these tools are New York City's Comprehensive Zoning Resolution, which contains a Special Transit Land Use District along the corridor, requirements for sidewalks and other pedestrian-friendly amenities, and parking restrictions and disincentives, including an 18 percent parking tax for parking facilities in Manhattan. Moreover, high parking costs, resulting from market forces and City policies, serve as a strong deterrent to parking in the area, including the Second Avenue Corridor. On-street parking is limited, but usually fully utilized in corridor neighborhoods. Limited supplies of metered parking are available on streets with retail uses. Existing zoning policies do not encourage the expansion of parking supplies.

Other Factors

In the agency's plans to rebuild the site of the World Trade Center, following the September 11th terrorists attacks, the Lower Manhattan Development Corporation, along with other local officials, have indicated that the construction of the proposed Second Avenue Subway is a key long-term component in rebuilding Lower Manhattan since the new subway line is anticipated to improve access to Lower Manhattan. Improved access is considered essential by local officials to meet the needs of Lower Manhattan commuters and, more generally, to preserve the region's economic competitiveness.

Local Financial Commitment
Rating: Medium

The *Medium* local financial commitment rating was determined by the *Medium* rating for the capital financing plan.

Proposed Non-Section 5309 New Starts Share of Total Project Costs: 50%
Rating: Medium

The financial plan for the Second Avenue Subway project proposes Section 5309 New Starts funds and State and local funds.

Locally Proposed Financial Plan		
Proposed Source of Funds	**Total Funding ($million)**	**Percent of Total**
Federal: Section 5309 New Starts	$8,404.5	50.0 %
State/Local: MTA Dedicated Sources	$8,404.5	50.0 %
Total:	**$16,809**	100.0 %

NOTE: Funding proposal reflects assumptions made by project sponsors, and are not DOT or FTA assumptions. Total may not add due to rounding.

Stability and Reliability of Capital Financing Plan
<u>Rating: Medium</u>

The *Medium* rating reflects the stability of the funding sources that are included in the MTA's financial plan for the Second Avenue Subway: debt financing, bonding capacity, fare revenues, etc., including the agency's ability to obtain financing support from the MTA's non-Federal funding partners (City, State and private sector). The rating also acknowledges that, at this time, approximately 12.6 percent of the total non-Section 5309 New Starts share of the project's total estimated capital cost has been committed. However, the rating also reflects MTA's inability to specify the non-Section 5309 New Starts capital funds that would be used to implement the proposed project due to the agency's Capital Improvement Program (CIP) cycles.

Agency Capital Financial Condition: MTA's financial condition, as reflected in the agency's audited financial statements, is stable. MTA's bonds are rated in the upper-to-medium grade levels by the major credit rating agencies (Fitch, Moody's and Standard and Poor's). The average age of the agency's bus fleet is 5.4 years. The average age of the MTA's rail fleet is 27.6 years, two years/28 years (diesel/electric rail fleet), and 21 years, for New York City Transit, LIRR and Metro-North Railroad, respectively. Annual trips throughout MTA's transportation network reached 2.34 billion in 2001. MTA is nearing completion of a $14 billion restructuring of the agency's debt obligations (the largest debt restructuring in the history of the municipal market). This action will consolidate 13 of the MTA's existing 16 credits into four new credits. The debt-restructuring plan, which was approved by the New York legislature's Capital Program Review Board (CPRB) in early 2002, is anticipated to generate approximately $4.5 billion in cash flow for the MTA. MTA anticipates that this action will also result in stronger credits, improved bond ratings and allow the agency to manage its debt more efficiently.

Capital Cost Estimate and Contingencies: At this time, the total capital cost estimate for the Second Avenue Subway is reasonable for this stage of project development (Preliminary Engineering). The estimate also includes a 50 percent contingency. Three construction techniques for tunnel and station construction, depending on geological conditions and specific facilities that may be needed at street level, are currently under consideration by MTA. These include: tunnel boring, cut and cover, and mining.

Existing and Committed Funding: At this time, approximately 12.6 percent ($1.06 billion) of the total non-Section 5309 New Starts share of the project's total estimated capital cost has been committed in the MTA's FY 2000-FY 2004 CIP. MTA has indicated that the remaining 87.4 percent ($7.34 billion) would be committed in future MTA CIPs. Yields from MTA's soon-to-be-completed debt restructuring, under projected market conditions, are anticipated by MTA to provide an additional $1 billion in bond proceeds without an increase in the agency's debt obligations. The State's CPRB approved the MTA's debt-restructuring plan in early 2002.

New and Proposed Sources: No new funding sources are proposed for the construction of the Second Avenue Subway.

Stability and Reliability of Operating Finance Plan
<u>Rating: Medium</u>

The *Medium* rating acknowledges MTA's adequate operating condition. Revenues, including farebox receipts and other dedicated sources to operate the Second Avenue Subway (SAS), are sufficient at this time. However, the rating also acknowledges MTA's inability to identify specific revenue sources that would be used to operate the proposed project. The rating also acknowledges MTA's anticipated operating budget deficit for the agency's 2003-2005 budgetary cycle.

Agency Operating Financial Condition: MTA's audited financial statements indicate that the agency is currently operating within a sound financial framework. MTA's farebox recovery rate for the past ten years has ranged between 45 percent and 58 percent, reflecting stability in the agency's operating revenues and expenses. However, MTA is currently projecting a $2.7 billion operating deficit for the agency's 2003-2005 budgetary cycle. MTA reports that the anticipated operating deficit is attributable to a downturn in the regional economy, labor costs, and a reduction in State and City financial contributions. MTA is currently preparing a series of cost-saving measures to address the projected deficit.

Operating Cost Estimates and Contingencies: Annual operating and maintenance costs for the SAS are estimated at $44 million (escalated dollars). While this estimate is considered reasonable for the current stage of project development, it should be noted that MTA did not estimate operating and maintenance costs beyond the year 2020. The SAS is scheduled to initiate revenue service in the year 2021. Between the years 2005-2020, MTA estimates New York City Transit annual growth in fare revenues to range from 2.7 percent to 3.9 percent. MTA determined these estimates by comparing ridership forecasts and fare assumptions for transit fares and the combined impact of ridership growth and annual inflationary fare adjustments for commuter fares. MTA's total operating and maintenance costs [agency-wide] for the years 2012-2020 are estimated at $83 billion. Based on MTA's projections, operating and maintenance costs for the SAS are considered minimal, in comparison to the MTA's overall operating expenses.

Existing and Committed Funding: All proposed sources of operating funding (fares, dedicated revenues, State and local operating assistance, etc.) currently exist. The MTA did not provide a system-wide operating plan outlining forecasted revenue sources and specifically matching them to the proposed SAS project. MTA's documentation indicates that cash flow needs for operations, debt service payments and capital investments are funded from a pool of the agency's dedicated revenue sources.

New and Proposed Funding Sources: No new funding sources for operating revenues are proposed for the Second Avenue Subway.

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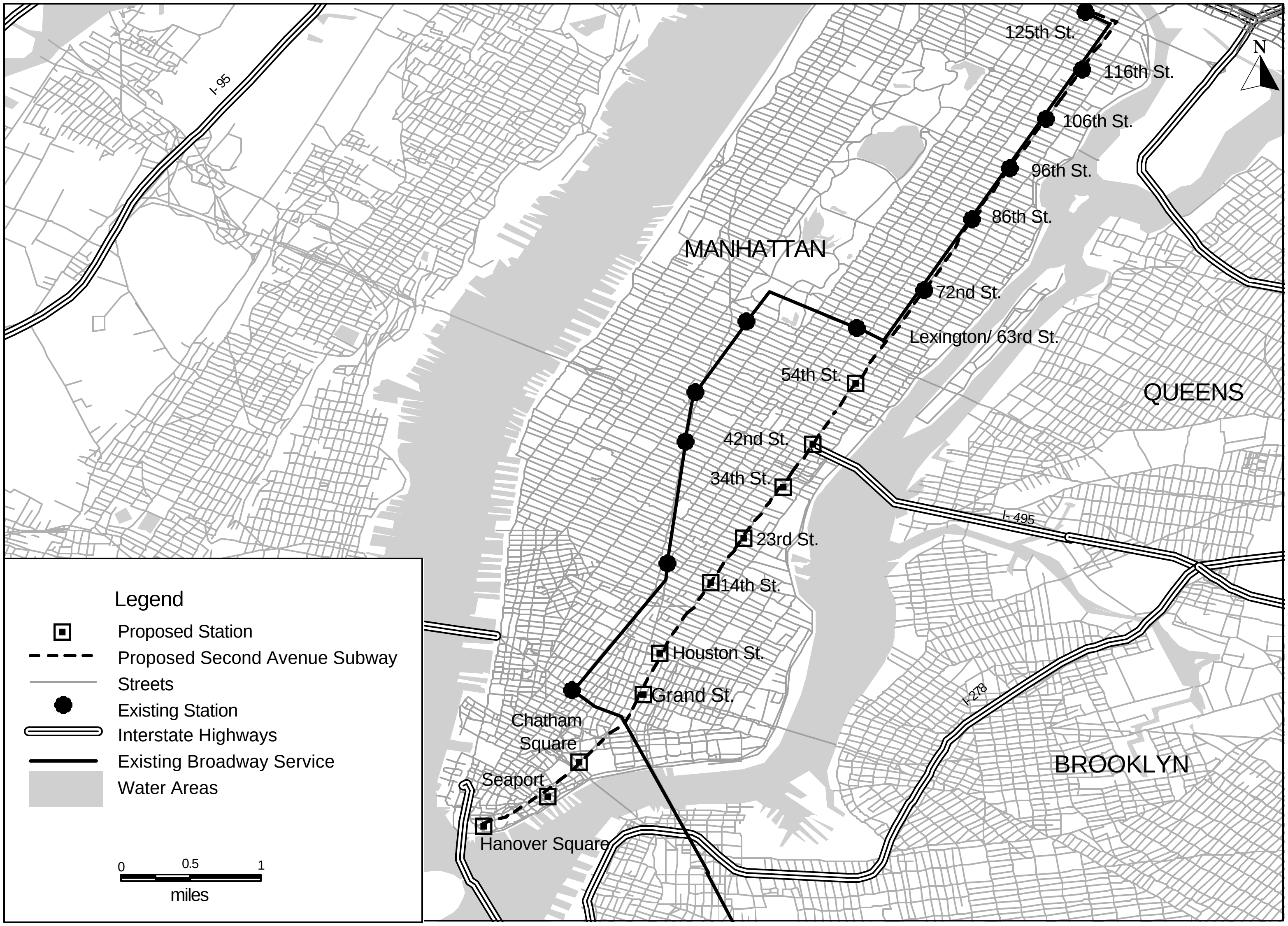

Federal Transit Administration, 2002